

AMENDMENTS TO THE CLAIMS

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
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11. (Cancelled)
12. (Cancelled)
13. (Cancelled)
14. (Cancelled)
15. (Cancelled)
16. (Cancelled)
17. (Previously presented) The method of claim 19, wherein the method further comprises heating the portion of the tooth.

18. (Previously presented) The method of claim 17, wherein electromagnetic radiation having a second wavelength range is applied to heat the portion of the tooth.

19. (Currently amended) A method of whitening and brightening at least a portion of a tooth, comprising:

irradiating the portion of the tooth with electromagnetic radiation having at least one wavelength range corresponding to the absorption spectrum of a stain in the tooth, wherein the at least one wavelength range corresponding to the absorption spectrum of the stain is not transmitted through an exogenous oxidizing compound.

20. (Previously presented) The method of claim 19, wherein said stain is an endogenous chromophore.

21. (Previously presented) The method of claim 19, wherein said stain is present within enamel of the tooth.

22. (Previously presented) The method of claim 19, wherein said stain is present within the tooth dentine.

23. (Previously presented) The method of claim 19, wherein the stain has one or more components from the group of stains caused by coffee, tea, red wine, tannins, food pigments, tobacco, smoke particles, nicotine, poly-phenols and age-dependent tissue coloration.

24. (Cancelled)

25. (Previously presented) The method of claim 17, wherein the step of heating further comprises delivering optical radiation to the portion of the tooth to provide heating.

26. (Cancelled)

27. (Previously presented) The method of claim 19, further comprising applying an exogenous chromophore to the tooth and irradiating the exogenous chromophore with electromagnetic radiation in a spectrum absorbed by the exogenous chromophore.

28. (Previously presented) The method of claim 19, further comprising irradiating an endogenous photosensitizer.
29. (Previously presented) The method of claim 19, wherein said at least one wavelength range is in a range of any of about 560 nm – 600 nm, 610 nm - 650 nm, 740 nm -780 nm, 1040 nm - 1080 nm, and 1248 nm - 1288 nm.
30. (Previously presented) The method of claim 28, wherein said endogenous photosensitizer is a photosensitizer from the group of organic compounds and oxygen.
31. (Previously presented) The method of claim 19, wherein the at least one wavelength range is substantially in a range of about 280 nm -800 nm.
32. (Previously presented) The method of claim 19, further comprising photoactivating an internal structure of the tooth to cause rejuvenation of said structure by applying optical radiation having one or more wavelength components absorbable by at least one chromophore present in the tooth.
33. (Original) The method of claim 32, wherein said photoactivating step causes growth of new dentine in said tooth.
34. (Original) The method of claim 32, wherein said photoactivating step causes improvement in the enamel/dentine junction of said tooth.
35. (Cancelled)
36. (Cancelled)
37. (Cancelled)
38. (Cancelled)
39. (Cancelled)

40. (Cancelled)
41. (Cancelled)
42. (Cancelled)
43. (Previously presented) The method of claim 19, wherein the dose of radiation applied to the chromophore during a single session ranges from about 0.06 J/cm^2 to about 30 J/cm^2 .
44. (Previously presented) The method of claim 19, wherein a total dose of radiation applied to the chromophore during multiple sessions ranges from about 1 J/cm^2 to about 1000 J/cm^2 .
45. (Previously presented) The method of claim 19, further comprising irradiating the portion with electromagnetic radiation having a second wavelength range substantially between 300nm – 500 nm.
46. (Previously presented) The method of claim 19, further comprising photo-thermal bleaching the portion of the tooth by irradiating the portion with electromagnetic radiation having a second wavelength range suitable for heating the portion.
47. (Previously presented) The method of claim 46, wherein said second wavelength range is substantially one or more of the group of wavelength ranges consisting of 940 nm -980 nm, 1300 nm – 1600 nm, 1640 nm - 2140 nm, 2400 nm – 3200 nm and 9000 nm -12000 nm.
48. (Previously presented) The method of claim 46, wherein said second wavelength range is substantially between 1200 nm –12000 nm.
49. (Previously presented) The method of claim 19, wherein the electromagnetic radiation is irradiated at a power density of approximately 20 mW/cm^2 .

50. (Previously presented) The method of claim 19, wherein the electromagnetic radiation is irradiated at a power density between approximately 1 mW/cm^2 and 100 W/cm^2 .

51. (Previously presented) The method of claim 19, wherein the electromagnetic radiation is irradiated at a power density between approximately 10 mW/cm^2 and 10 W/cm^2 .

52. (Previously presented) The method of claim 19, wherein the at least one wavelength range is approximately centered around the absorption spectrum of a stain in the tooth.